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EXAMINER	
BEDNASH, JOSEPH A	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/591,107	Applicant(s) LIU, ENHUI	
	Examiner Joey Bednash	Art Unit 2461	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-14,17,18 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-14,17,18 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 November 2010* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This action is responsive to amendments filed on 23 November 2010. Claims 1-5, 7-14, 17, 18 and 21 are pending in the application. Claims 1-5, 7-14, 17, 18 and 21 have been amended. Claims 6, 15, 16, 19 and 20 have been cancelled.

Specification

The substitute specification of 26 October 2006 was not entered because it raised an issue of new matter. If applicant's feel the amendments in the substitute specification does not incorporate new matter, examiner respectfully requests applicant's provide evidence of support for the amended portions of the specification of 26 October 2006.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-5, 7, 8, 17, 18 and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 includes a

limitation of “and control an Interconnection Border Gateway Function (I-BGF) at a border between two core networks" in lines 16-17. The original disclosure does not describe this limitation, but rather that the I-BGF is at the border between the access network and the core network. It is examiner’s understanding based on the original disclosure that the claimed Interconnection Admission Control Function (I-ACF) makes an admission control decision for traffic that needs to traverse a core network from the access network and that the I-BGF is at the border between the access network and the core network. Claims 2-5, 7, 8, 17 and 18 depend from claim 1 and therefore also are rejected on the grounds that they incorporate new matter.

Furthermore, claim 2 includes a limitation of the A-RCF acquiring status information of the core network. The original disclosure describes the C-RCF as performing this function.

Claim 21 includes a similar limitation regarding the I-BGF at the border between core networks, therefore claim 21 is rejected on the grounds of new matter.

Claim Rejections - 35 USC § 103

Claims 1-3, 5, 9-14, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant’s Admitted Prior Art (AAPA) (US 2009/0116382 A1), in view of Chakravorty et al. “Dynamic SLA-Based QoS Control for Third Generation Wireless Networks: The CADENUS Extension”, hereinafter “CUE”, in view of Chen et al. (U.S. Patent No. 6,487,170 B1), hereafter “Chen”.

Regarding claim 1, AAPA discloses a resource and admission control subsystem in a next generation network (NGN), comprising:

an Access Admission Control Function (A-ACF) **(i.e. Resource and Admission Control Subsystem (RACS))**, configured to receive a first resource reservation request from an application service media flow for a transport layer of the NGN, perform an authentication and make a first admission control decision for the first resource reservation request based on a user profile, operation policy rules, and a transport resource availability **(Para [0007], requested bandwidth)**, and control an Access Border Gateway Function (A-BGF) at a border between an access network of the NGN and a core network of the NGN in accordance with a result of the first admission control decision **(Para [0004], under control of the RACS, the transport layer provides IP connectivity; Para [0007], lines 14-20, A-BGF is controlled by the service layer)**;

an Interconnection Admission Control Function (I-ACF) **(i.e. RACS)**, configured to receive a resource reservation request from a cross-operator application service media flow for the transport layer of the NGN, perform an authentication and make an admission control decision for the resource reservation request based on the user profile, the operation policy rules, and the transport resource availability **(Para [0007], requested bandwidth)**, and control an Interconnection Border Gateway Function (I-BGF) at a border between two core networks of the NGN in accordance with a result of an admission control decision **(Para [0004], under control of the RACS, the transport layer provides IP connectivity; Para [0007], lines 14-20, I-BGF is controlled by the service layer)**;

a Gq interface **(Para [0010])**;

a Go interface **(Para [0010])**;

a G3 interface **(Para [0004]-[0005], RACS controls the transport layer, The BGF may interact with entities on the service layer; I-BGF is also disclosed, therefore there is an interface between the I-BGF and the service layer; Para [0006]; RACS must have interfaces to the transport layer)**;

wherein an application service control function **(Para [0010] application function (AF))** in a NGN application service subsystem interacts with the A-ACF via the Gq interface, in order to send resource reservation requirements of the application service media flow for the transport layer to the A-ACF through the first resource reservation request **(Para [0007], requested bandwidth; Para [0010] PDF function is connected to the AF via the Gq interface)**;

wherein the A-ACF **(i.e. PDF, while AAPA discusses the RACS and the PDF independently, it would have been obvious to one of ordinary skill in the art based on AAPA that the PDF is performing an admission control function like RACS)** controls the A-BGF **(i.e. TPF, as referenced above, the A-BGF exists in the traffic plane and it would have been obvious to one of ordinary skill in the art that the traffic plane function controlled by the PDF could be the A-BGF)** at the border between the access network and the core network via the Go interface **(Para [0010]; PDF is connected to the TPF via the Go interface)**, in accordance with the result of the first admission control decision, to perform the functions of: gate opening or closing, wherein the gate indicates a packet filtering by IP address/port, packet marking for

outbound traffic, bandwidth reservation and allocation for inbound/outbound traffic, IP address and port translation, policing of inbound traffic, packet filtering-based firewall, and measurement of usage, for the application service media flow **(Para [0005])**;

wherein the I-ACF **(i.e. PDF while AAPA discusses the RACS and the PDF independently, it would have been obvious to one of ordinary skill in the art based on AAPA that the PDF is performing an admission control function like RACS)** controls an Interconnection Border Gateway Function (I-BGF) at the border between the two core networks via the G3 interface **(i.e. TPF , as referenced above, the A-BGF exists in the traffic plane and it would have been obvious to one of ordinary skill in the art that the traffic plane function controlled by the PDF could be the I-BGF)**, in accordance with the result of an admission control decision, to perform the functions of gate opening or closing, packet marking for outbound traffic, bandwidth reservation and allocation for inbound/outbound traffic, IP address and port translation, policing of inbound traffic, packet filtering-based firewall, and measurement of usage, for the cross-operator application service media flow **(Para [0005])**,

AAPA discusses performing a transport resource availability check to verify whether the requested bandwidth matches subscribed bandwidth which suggests this checking and resource allocation is performed on the basis of a resource status database **(Para [0007])**, but AAPA does not disclose a Resource Control Function in access network (A-RCF), configured to check the transport resource availability in accordance with a first transport resource availability check request from the A-ACF, update the resource allocation status, and return a first check result of the transport

resource availability; a Resource Control Function in core network (C-RCF), configured to check the transport resource availability in accordance with a second transport resource availability check request from the A-ACF or the I-ACF, update the resource allocation status, and return a second check result of the transport resource availability.

AAPA mentions an interconnect border control function **(AAPA: Para [0003])** but does not disclose an Id interface or that an interconnection border control function (IBCF) interacts with the I-ACF via the Id interface, to send the resource reservation requirements of the cross-operator application service media flow for the transport layer to the I-ACF through the second resource reservation request. Furthermore, AAPA does not explicitly recite a second resource reservation request.

AAPA does not disclose and wherein the A-ACF, I-ACF, A-RCF and C-RCF are logical functional entities, which are separate physical devices or functional modules integrated in other physical devices.

CUE teaches an IP BS Manager in a GGSN **(Fig. 2 IP BS Manager in the Gateway)** which receives UE application QoS requirements via request messages or RSVP control messages which are forwarded (i.e. a second resource reservation request) to the CUE-RM (i.e. I-ACF, which suggests an interface equivalent of the claimed Id interface which carries the forwarded requirements) which makes a second admission control decision to accept or reject the user application QoS requirements **(pp. 941-942; A. Control Management in CUE and subsequent description)**. CUE teaches and wherein the A-ACF, I-ACF, A-RCF and C-RCF are logical functional entities, which are separate physical devices or functional modules integrated in other

physical devices **(pg. 941 last line of 2nd col. To pg. 942 end of first paragraph)**. CUE discloses there is a need for implementing end-to-end QoS in a wired-wireless environment and the solutions presented in CUE are directed at providing end-to-end QoS control **(pg. 938, Section I. Introduction)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the IP BS Manager as taught in CUE to forward QoS requirements to an access control function of the core network in the form of a second resource reservation request, because CUE teaches that it is the responsibility of the UMTS to ensure QOS from the core network **(pg. 941 A. Control Management in Cue, and following paragraphs)** and CUE teaches this as a solution to the need for end-to-end QoS control in wired-wireless networks.

While CUE mentions the use of bandwidth brokers (BB) in the resource allocation and policy control decision process in which edge routers send resource allocation requests to a logically centralized BB **(pg. 943, 1st col. 2nd to last paragraph)**, and suggests this allows for dynamic allocation of resources to prevent under utilization of network resources **(pg. 943, 1st col, 3rd to last paragraph)**, the combination of AAPA and Cue does not explicitly recite:

Resource Control Function in access network (A-RCF), configured to check the transport resource availability in accordance with a first transport resource availability check request from the A-ACF, update the resource allocation status, and return a first check result of the transport resource availability; a Resource Control Function in core network (C-RCF), configured to check the transport resource availability in accordance

with a second transport resource availability check request from the A-ACF or the I-ACF, update the resource allocation status, and return a second check result of the transport resource availability, and wherein the A-ACF, I-ACF, A-RCF and C-RCF are logical functional entities, which are separate physical devices or functional modules integrated in other physical devices.

Chen discloses a Resource Control Function **(i.e. bandwidth broker)**, configured to check the transport resource availability in accordance with a transport resource availability check request **(Col. 5, lines 56-60)**, update the resource allocation status **(Col. 11, lines 20-54)** and return a first check result of the transport resource availability **(Col. 5, line 60 – Col. 6, line 1)**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the resource broker perform the functions for both the A-RCF and C-RCF both the taught by Chen as the bandwidth broker disclosed by CUE because Chen indicates the use of a distributed bandwidth broker approach can increase premium service bandwidth utilization over a centralized bandwidth broker approach **(Col. 2, lines 53-56; Col. 4, lines 25-45)**.

Regarding claim 2, AAPA in view of CUE and Chen fairly suggests the resource and admission control subsystem according to claim 1, further comprising:

wherein the A-RCF is further configured to acquire status information including topology and bandwidth of transport resources in the access network **(Chen: Col. 6, lines 51-63)**, control QoS-related traffic handling and resource reservation activities of a

Traffic Plane Function in access network (A-TPF) **(CUE: pg. 939, 1st col. last paragraph to 2nd col. paragraph after Fig. 3)**, maintain a database of transport resource availability and resource allocation status **(Chen: Col. 6, lines 51-63)**;

wherein the A-RCF is further configured to acquire status information including topology and bandwidth of transport resources in the core network **(Chen: Col. 6, lines 51-63)**, control QoS-related traffic handling and resource reservation activities of a Traffic Plane Function in core network (C-TPF) **(CUE: pg. 939, 1st col. last paragraph to 2nd col. paragraph after Fig. 3)**, maintain a database of transport resource availability and resource allocation status **(Chen: Col. 6, lines 51-63)**;

and the resource and admission control subsystem further comprising:

a G2 interface **(Chen: Fig. 3A Measurement Process 350, Col. 7, lines 5-15 ; AAPA: Fig. 2; Para [0006])**;

a G1 interface **(Chen: Fig. 3A Measurement Process 350, Col. 7, lines 5-15 ; AAPA: Fig. 2; Para [0006])**;

an X1 interface **(CUE: pg. 941, 2nd Col. last paragraph; pg. 943 1st col. 2nd to last paragraph)**; and

an X2 interface **(CUE: pg. 941, 2nd Col. last paragraph; pg. 943 1st col. 2nd to last paragraph)**;

wherein the C-RCF acquires transport resource status information in the core network via the G2 interface, and controls QoS-related traffic handling and resource reservation activities of the C-TPF **(Chen: Fig. 3A Measurement Process 350, Col. 7, lines 5-15 ; AAPA: Fig. 2; Para [0006])**;

the A-RCF acquires transport resource status information in the access network via the G1 interface, and controls QoS-related traffic handling and resource reservation activities of the A-TPF **(Chen: Fig. 3A Measurement Process 350, Col. 7, lines 5-15 ; AAPA: Fig. 2; Para [0006])**;

the A-RCF interacts with the A-ACF via the X1 interface, to receive the transport resource availability check request from the A-ACF and return the first check result of the transport resource availability in the access network to the A-ACF **(CUE: pg. 941, 2nd Col. last paragraph; pg. 943 1st col. 2nd to last paragraph)**;

and the C-RCF interacts with the A-ACF via the X2 interface, to receive the transport resource availability check request from the A-ACF and return the second check result of the transport resource availability in the core network to the A-ACF **(CUE: pg. 941, 2nd Col. last paragraph; pg. 943 1st col. 2nd to last paragraph)**.

Regarding claim 3, AAPA in view of CUE and Adams fairly suggest the resource admission control subsystem according to claim 1, further comprising an X3 interface, wherein the C-RCF interacts with the I-ACF via the X3 interface, to receive the transport resource availability check request from the I-ACF and return the second check result of transport resource availability in the access network to the I-ACF **(The teaching found in CUE to use a bandwidth broker and in Adams to use a resource broker suggests some interface between on which to send and receive communications related to resource requests and allocations to and from the bandwidth broker or resource broker)**.

Regarding claim 5, AAPA teaches the user profiles can be stored in a remote location of the network **(Para [0007])** which suggests an I1 interface, wherein the A-ACF interacts with a Network Attachment Subsystem (NASS) via the I1.

Regarding claim 17, AAPA in view of CUE and Chen fairly suggests the resource and admission control subsystem according to claim 2, wherein

in each network administrative domain, a centralized Resource Control Function (RCF) or a plurality of RCFs distributed in sub-domains are provided in accordance with the network scale and the type of transport technology;

if a plurality of RCFs distributed in the sub-domains are provided in one administrative domain, the RCFs can interact and coordinate with each other via a universal and extensible protocol interface, so as to accomplish checking of edge-to-edge transport resource availability for the resource reservation request across the entire administrative domain, wherein the RCF is A-RCF or C-RCF **(Chen: Col. 4, lines 25-45: Distributed bandwidth brokers; Col. 6, line 65-Col. 7, line 5)**.

Regarding claims 9-14, the claims are directed towards the method performed by the resource and admission control subsystem of claims 1-5, 7 and 17; therefore, claims 9-14 are rejected on the grounds presented above for claims 1-5, 7 and 17.

Claim 21 is rejected on the grounds presented above with respect to claim 1 because claim 21 is directed towards a broader version of the subsystem of claim 1; therefore the art of record applied in the rejection of claim 1 fairly suggests the limitations of claim 21.

Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of CUE and Chen, further in view of Bodin et al. (US 2006/0036719 A1), hereinafter “Bodin”.

Regarding claim 4, AAPA in view of CUE and Chen fairly suggests claim 1, and teaches an interface between RACS **(AAPA: Fig. 2, Para [0008])**, however the references do not teach forwarding resource reservation requests between RACS for cross-operator application service media flows.

Bodin teaches a Network Resource Manager (NRM) **(Para [0007])** which exist in different operator networks **(Fig. 1, Para [0042])**. These NRMs communicate with each other to reserve resources in the different domains **(Para [0064])**. Bodin teaches there are strong commercial reasons for providing unified solutions to ensure QoS in IP networks **(Para [0005])**.

Given the known interface between RACS as shown in APAA and the teachings of Bodin, it would have been obvious to one of ordinary skill in the art at the time of the invention to communicate resource reservation requests between RACS via an communication interface interconnecting the RACS because the suggestion lies in

Bodin that providing this intercommunication between resource managers provides a unified solution to providing QoS in IP networks.

Regarding claim 7, AAPA in view of CUE and Chen teaches claim 1 and suggests a plurality of resource control functions (RCFs) distributed among network domains **(AAPA: Para [0004]; Fig. 2, Para [0008])**. While CUE teaches a centralized resource control function **(Fig. 5, CUE-RM)**, the combination of references does not teach a coordination of a plurality of distributed RCFs.

Bodin teaches a Network Resource Manager (NRM) **(Para [0007])** which exist in different operator networks **(Fig. 1, Para [0042])**. These NRMs communicate with each other to reserve resources in the different domains **(Para [0064])**. Bodin teaches there are strong commercial reasons for providing unified solutions to ensure QoS in IP networks **(Para [0005])**.

Given the known interface between RACS as shown in APAA and the teachings of Bodin, it would have been obvious to one of ordinary skill in the art at the time of the invention to coordinate a plurality of distributed RCFs because the suggestion lies in Bodin that providing this coordination between distributed RCFs provides a unified solution to providing QoS in IP networks.

Claim Rejections - 35 USC § 103

Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of CUE and Chen, further in view of Dos Santos et al. (US 2006/0143701).

Regarding claim 8, AAPA in view of CUE and Chen fairly suggest the resource and admission control subsystem in a next generation network according to claim 1, wherein

Resource Control Functions (RCFs) in different network administrative domains are interconnected via Admission Control Functions (ACFs); wherein the ACF is A-ACF or I-ACF and the RCF is A-RCF or C-RCF **(AAPA: Fig. 2, Para [0006]; Chen: Col. 5, line 50-53; AAPA and Chen disclose the need for RACS and bandwidth brokers to communicate with other RACS and bandwidth brokers in other networks or devices. It would have been obvious to one of ordinary skill that the communication between bandwidth brokers as taught by Chen could be carried out across the communication path between RACs in other networks as shown in AAPA)**.

AAPA in view of CUE and Chen does not teach if there is a trusting relationship between the different network administrative domains, the RCFs in the different network administrative domains interface to each other, and exchange information with each other.

Dos Santos et al. disclose the use of a process to authenticate a user and verify the integrity of the control message among a trusted domain of network nodes to ensure

the control messages are not generated by a hostile or malicious user **(Para [0009])**. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the methods taught by Dos Santos et al. to prevent hostile or malicious users from attacking the bandwidth broker.

Regarding claim 18, AAPA in view of CUE and Chen fairly suggest the resource and admission control subsystem in a next generation network according to claim 2, wherein

Resource Control Functions (RCFs) in different network administrative domains are interconnected via Admission Control Functions (ACFs); wherein the ACF is A-ACF or I-ACF and the RCF is A-RCF or C-RCF **(AAPA: Fig. 2, Para [0006]; Chen: Col. 5, line 50-53; AAPA and Chen disclose the need for RACS and bandwidth brokers to communicate with other RACS and bandwidth brokers in other networks or devices. It would have been obvious to one of ordinary skill that the communication between bandwidth brokers as taught by Chen could be carried out across the communication path between RACs in other networks as shown in AAPA)**.

AAPA in view of CUE and Chen does not teach if there is a trusting relationship between the different network administrative domains, the RCFs in the different network administrative domains interface to each other, and exchange information with each other.

Dos Santos et al. disclose the use of a process to authenticate a user and verify the integrity of the control message among a trusted domain of network nodes to ensure

the control messages are not generated by a hostile or malicious user **(Para [0009])**. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the methods taught by Dos Santos et al. to prevent hostile or malicious users from attacking the bandwidth broker.

Response to Arguments

Applicant's arguments with respect to claims 1-5, 7-14, 17-18 and 21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joey Bednash whose telephone number is (571)270-7500. The examiner can normally be reached on Mon-Fri 9:00 AM to 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joey Bednash/
Examiner, Art Unit 2461

/Jason E Mattis/
Primary Examiner, Art Unit 2461